

CITY OF LINCOLN NEBRASKA, STANDARD SPECIFICATIONS

Chapter 31

LANDSCAPE WORK

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CHAPTER 31 LANDSCAPE WORK

31.00 DESCRIPTION

- A. The work described in this section shall pertain to any landscape work. Work shall include all labor, material and equipment as herein specified. The work shall comply with the requirements of all legally constituted authorities having jurisdiction.
- B. Nomenclature used in these Specifications and the Special Provisions, and the plans shall conform to the standard nomenclature established in "Hortus Third"; American Standard for Nursery Stock (ANSI Z60.1-2004) or the Tree and Shrub Transplanting Manual, 1991 or current revision.
- C. Plant material shall mean trees, shrubs, vines, ground covers and plants of all descriptions, required to be furnished for the project, in accordance with these Specifications, the Special Provisions, and the details shown in the plans.
- D. This work shall consist of furnishing, delivering and planting of plant material and all operations incidental thereto, in accordance with City of Lincoln Standard Plans, the Special Provisions, and these Specifications.

31.01 QUALITY ASSURANCE

- A. All plant material shall conform to the American Standard for Nursery Stock (ANSI Z60.1-2004 or most current)
- B. Contract landscape work to a single firm specializing in the growing and planting of plant material. Firm shall have satisfactory record of performance on completed projects of comparable size and quality.
- C. Trees, Shrubs and Plants: Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
- D. If specified landscape material is unobtainable, submit proof to City Arborist, Landscape Architect or Engineer together with proposal for use of equivalent material.
- E. The City Arborist, Landscape Architect or Engineer may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size and quality, size and condition of balls and root systems, insects, injuries and latent defects. The City Arborist, Landscape Architect or Engineer may reject unsatisfactory or defective material at any time during progress of work. Rejected trees or shrubs shall be immediately removed from project site.

31.01 QUALITY ASSURANCE (Continued)

F. Submittals

Certificate of Inspection: Submit certificates of inspection as required by governmental authorities.

Certified Analysis: Submit manufacturer's certified analysis, or, where applicable, Analysis of recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists. Include soil amendments and fertilizer materials.

Container-Grown Material: Submit samples of all container-grown material prior to planting.

List of Sources: Submit a written list of the nurseries where the plant material was grown. Plant materials from unapproved sources will be rejected.

31.02 PLANTING SEASON

Within thirty days after receiving the signed contract, the Contractor shall submit a written list of the nurseries from whom the Contractor will purchase the plant material, and the source where the plant material was grown. The list shall be submitted to the City Arborist, Landscape Architect or Engineer. The Contractor will be notified if there are any unapproved sources of plant materials on the list. Plant materials from unapproved sources will be considered for rejection.

The planting season for all plant material shall be: Fall Planting season shall be from September 15 to December 1 for all coniferous materials, from September 15 to December 1 for all deciduous materials and August 15 to September 15 for all perennials and ornamental grasses; Spring Planting season shall be from March 1 to June 1 for all coniferous materials, from March 1 to June 1 for all deciduous materials and May 1 to June 1 for all perennials and ornamental grasses. Planting operations shall be performed during this season only, except when prior written permission is obtained from the City Arborist, Landscape Architect or Engineer. The actual planting shall be performed during those times in this season which are normal for such work as determined by weather conditions, and accepted practice in the locality.

31.03 MATERIALS

A. GENERAL PLANT MATERIALS REQUIREMENT

1. All plant material shall conform to the American Standard for Nursery Stock (ANSI Z60.1-2004 or most current)
2. All plant material shall comply with all applicable State and Federal laws, including inspection certifications which shall include the project number and the plant material that the certification covers. All plant material is subject to inspection by representatives of the City, State and Federal Governments.

31.03 MATERIALS (Continued)

3. All plant material furnished shall be true to name and type and legible labels shall be furnished to insure that all species, varieties, boxes, bundles, bales or other containers are identified. The information on the label shall cover the botanical genus, species, and common name, size or age of each species or variety.
4. All plant material shall be sound, healthy specimens and first-class representatives of their species or variety, and shall have well formed tops and healthy root systems.
5. Plant materials which lack proper proportions, or have serious injuries to the bark or roots, broken branches, objectionable disfigurements, shriveled dry roots, broken balls, insect pests, diseases, or which are not found to comply with these Specifications in any way shall be rejected. Rejected plant material shall be removed from the project as soon as practical.
6. Plant materials which are planted and later discovered to be not true to name, may be allowed to remain in place without payment being made therefor.
7. A representative sample of all container grown and/or pot grown material shall be submitted to the City Arborist, Landscape Architect or Engineer for approval prior to planting if requested.
8. All balled and burlapped (B & B) and container grown plant material is subject to internal examination of the ball at any time to ascertain the condition of the roots and surrounding soil ball and the location of the root collar/trunk flare(s) in relation to the top of the soil ball.
9. Any plant material that is planted which does not meet the specified minimum size prior to pruning shall be rejected or allowed to remain in place without payment being made therefor.
10. If a Contractor is unable to locate sufficient plant material in specified sizes, negotiation for unit price reduction shall be concluded prior to planting.
11. All plant materials shall be of normal growth and uniform height, according to species, with straight trunks and developed leaders, roots, and crowns. Heeled in stock will not be acceptable. Plants cut from larger sizes to meet bid specifications shall not be accepted.
12. All plant material shall be true to species and variety specified and nursery grown in accordance with good horticultural practices. Plant material collected from wild or native stands will not be accepted, nor that which is sheared.
13. Coniferous trees (i.e., pines, firs, spruce) which have been sheared, will not be accepted. All coniferous trees shall have a single leader with a viable bud. Trees with multiple leaders may be pruned leaving a single leader, providing that the resulting form is characteristic of the species.

31.03 MATERIALS (Continued)

14. All plant material shall be sound, healthy, vigorous, well branched and densely foliated if in leaf, free of disease, insects, eggs or larvae and shall have healthy, well developed root systems. They shall be free from physical or mechanical damage or conditions that would prevent thriving growth.
15. The bark of woody plant material shall be healthy and firm with no indications of fungus, cankers or galls, insect bores, die back, frost cracks, sun scald or mechanical injury. Any of these defects shall be reason for rejection.
16. All plant material shall exhibit adequate and healthy twig growth and have well formed live buds. Branches shall diverge from the trunk at a wide angle, except in those varieties that normally grow in narrow upright forms. Plants shall have normal, well developed branches, be uniformly and fully branched as seen from all sides, have good crotch angles and a vigorous root system. All plants shall be first class representatives of their species or variety.
17. Trees with multiple leaders, unless specified, shall be rejected.
18. Plants that meet specified sizes, but do not possess a normal balance between height and spread shall be rejected.
19. Plant material with a damaged or crooked leader or having pruning cuts over 3/4 inch in diameter that are not completely callused, shall be rejected.
20. All plant material is subject to visual inspection by the City Arborist, Landscape Architect or Engineer prior to installation. All plant material shall be assembled in one location to permit inspection if requested. The supplier of plant materials shall notify the City Arborist for street trees and the Landscape Architect or Engineer for park trees or other City landscape projects at least five (5) working days prior to delivery so that a mutually agreeable time can be arranged for inspection, if requested by the City.
21. Substitution of specified plant material shall not be permitted unless authorized by the City Arborist, Landscape Architect or Engineer.
22. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the City Arborist, Landscape Architect or Engineer. Use of larger plants shall not be cause for claims for additional payment. If larger plants are approved, the root system, container and/or root ball shall be increased in proportion to the size of plant.
23. Caliper measurements shall be taken on the trunk six (6) inches above the natural ground line for trees up to four (4) inches in caliper and twelve (12) inches above the natural ground line for trees over four (4) inches in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position.

31.03 MATERIALS (Continued)

24. If a range of size is given, no plants shall be less than the minimum size and no less than fifty percent (50%) of the plants shall be as large as the maximum specified. Measurements specified are minimum size acceptable after pruning, where pruning is required. Plants that meet height and spread but do not possess a normal balance between height and spread shall be rejected.
25. Plant material specifications for street trees will establish the height to which trees should be free of branching. Height of branching should bear a relationship to the size and kind of tree so that the crown of the tree will be in good balance with the trunk (i.e. $\frac{1}{3}$ to $\frac{1}{2}$ the total height of the tree is a trunk free of branching and the other $\frac{1}{2}$ to $\frac{2}{3}$ is a well branched tree crown). **Refer to Section 1, ANSI Z60-2004 or most current.** Branching height for specified plant materials will be noted on the bid proposal and all bidders should be aware of this specification. Plant material not meeting this specification may be rejected by the City.
26. The minimum height growth for pine trees shall be as follows: a) trees 3 - 5 feet in height shall have at least 2 feet of new height growth during the last 2 growing seasons, and b) trees 5 foot and over in height must have at least 3 feet of new height growth during the last 3 growing seasons.

B. NURSERY GROWN PLANT MATERIALS

1. All plant materials shall be “nursery grown” by established commercial nurseries and sold to and installed by licensed and certified nurseries and/or landscape contractors.
2. Fresh dug material is given preference over plant material held in storage. Plant material held in storage may be rejected if excessive growth has occurred in storage.
3. Unnecessary injury to or removal of fibrous roots from the plant material is cause for rejection of the plant materials. The soil for balled material shall be in such condition so as to insure no crumbling or cracking. Balls shall be wrapped with burlap prior to removal from the ground. The burlap shall be held in place with cord and pinning nails. Handling of balled and burlapped material shall be in such a manner as to keep the soil intact. Plant material on which earthen balls do not hold together or which crack in handling shall be rejected.
4. Balled plant material shall have a solid ball of soil of adequate size held in place securely and wrapped with burlap and tightly bound with twine or rope. Soil balls may also be secured with wire baskets
5. Bare root plant material shall have abundant root growth and fibrous feeder roots with good color and moisture. Kinked, circling and/or girdling roots are not acceptable and plant material having such root systems shall be rejected.
6. Container grown plant material shall be well established in their containers. Container plant material which shows evidence of being root bound, overgrown, recently canned or which has girdling roots shall be rejected.

31.03 MATERIALS (Continued)

7. A processed balled shade or flowering tree (i.e., a tree dug bare root, while dormant, to which a growing medium is added around the roots to form a ball) shall not be acceptable.

C. TOPSOIL

Shall be fertile, friable, natural loam, dark in color (often black), free of subsoil, clay lumps, brush, weeds, roots, stumps, stones larger than 1-1/2" in any dimensions, debris and other extraneous or toxic matter and harmful to plant growth. Topsoil shall be obtained from local sources and exhibit an acidity range (pH) of 6.0 to 8.5. Identify location of source.

D. COMPOST

Shall be humus-like material made from the decomposition of organic materials which may have included leaves, branches, yard prunings and grass clippings such as LINGRO compost. The compost materials shall be decomposed to form a highly stabilized product and screened with ½ inc or less screen opening. The compost shall be free of all inorganic debris. LINGRO compost is available from the City of Lincoln's Solid Waste Operation - contact Gene Hanlon (402) 441-7043. Ratio of topsoil to compost should be a minimum of 2 to 1.

E. MULCH

Mulch for Trees, Shrubs and Perennials: Organic mulch, free from wood chips, sawdust and deleterious materials, suitable for top dressing of trees. Mulch shall consist of shredded native hardwood bark mulch not larger than 4" in length and ½" in width.

F. ANTI-DESICCANT

Anti-Desiccant: Emulsion type, film-forming agents designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.

G. PLANT STARTER

Plant Starter: Liquid solution with an analysis of 3-10-3 (low analysis fertilizer), such as Upstart manufactured by Ortho. Roots transplant 1-step (2-2-2) shall be provided by the City.

H. STAKES

Stakes shall be 2 inch x 2 inch wooden stake of suitable length to adequately support the plant material. The top six inches of the stake shall be painted with red paint as a safety warning feature. Typically, stakes will be a minimum of six (6) feet in length. Stakes shall be driven at least 12" into the soil for secure support.
(Refer to detail on page(s) 3108 - 3110)

I. SUPPORT TIES

No metal wire or rubber hose shall be used in supporting trees. Trees should be secured to stakes using a fabric type of tree tie (i.e. Arbor Tie). The support shall be tied in a figure eight (8) loop between the tree and the stake(s) to allow for flexibility. Do not tie trees too rigidly to stakes.

(Refer to detail on page(s) 3108 - 3110)

J. Tree Wrap

Tree wrap shall not be used on any trees planted in association with this contract. All existing tree wrap, cardboard or Styrofoam, if any, shall be removed from trunks immediately after planting.

K. Tree Guard

Tree guard (i.e. arbor-guard) shall be installed at the base of the trunk when the tree has been planted and will be provided by the City.

31.04 RECEIVING AND STORING OF PLANT MATERIALS

- A. Storage facilities for plant material must receive approval of the City Arborist, Landscape Architect or Engineer prior to delivery of the plant material. The storage facility shall have an adequate water supply, shade, good ventilation, and protection from drying winds.
- B. Plant material that cannot be planted immediately on delivery shall be kept in storage, and well protected with wet soil, sawdust, wood chips, shingle tow, moss, peat, straw, hay or other acceptable moisture holding media. Plant material stored in the above manner shall be kept well watered.

31.05 TRANSPORTING PLANTS TO THE PLANTING SITE

- A. **Delivery and/or the planting of street trees shall be coordinated with the City Arborist, Landscape Architect or Engineer at (441-7847) at least 24 hours before planting or delivery.** The successful bidder(s) shall notify the Arborist, Landscape Architect or Engineer as soon as possible when specified plant materials have been received so coordination of deliveries and/or plantings can be made. Plants shall be subject to inspection for conformity to specification requirements and approval by the City upon delivery and/or at time of planting, unless a request has been made for inspection prior to delivery.
- B. Prevention of mechanical damage to plant material (i.e., crown, trunk or roots) and protection of root systems and crowns from drying during transportation, delivering and/or planting shall be the responsibility of the successful bidder(s). Plant materials shall not be removed from storage prior to complete preparation of the planting site for immediate planting.
- C. **Loading.** Care shall be taken to protect the trunk, branches and roots from abrasions and breakage when loading, transporting, unloading and/or planting. Plants too tall to be transported in an upright position must be tipped to a horizontal position. Branches must be tied prior to tipping to prevent breaking branches and bruising of the bark. The trunk and top must be supported when plants are tilted to a horizontal position. The trunk must be blocked near the ball and tied secure for support. Trunks shall be padded to prevent bruising and tops tied securely to the bed of the truck or trailers.
- D. **Transporting.** Plants are to be transported by truck or low trailer. Bare-roots shall be covered with moist peat moss, sphagnum, sawdust, straw or wood chips before transporting. Plants shall have their tops tied in and be packed tightly on the truck to prevent shifting, which may cause breaking of the soil ball and branches. Excessive bending of branches must be avoided when tops are tied in or down. **All plants with leaves and/or transported long distances** shall be transported in an enclosed truck or covered with heavy canvas to prevent wind whipping and drying out while in transit. Plants in leaf shall be covered immediately before being transported and the cover shall be removed immediately after arriving at the planting site to avoid high temperatures which can severely injure the plants.

31.05 TRANSPORTING PLANTS TO THE PLANTING SITE (Continued)

- E. **Unloading.** Hand push carts shall be used to move balled and burlapped plants to the planting hole when unloaded from the truck. **Plant material set off at the planting site shall be protected from freezing, drying out, breaking apart, overheating and other injuries. Plants that will not be planted immediately shall be protected from drying by the sun and wind.**

31.06 LOCATION OF PLANT MATERIAL

- A. **Street Trees.** A list of designated locations (i.e., addresses) for street trees will be provided by the City Arborist when bid(s) has been awarded. Planting locations will be marked by the City with paint or wooden stakes. The Contractor is to inform the City Arborist on a **daily** basis by no later than 8:00 a.m. as to what locations have been planted during the prior day and where planting will resume. Access to the planting sites will be restricted to roads for all vehicles. Permission to travel with any equipment anywhere other than the established roads must be obtained from the Landscape Architect or Engineer.
- B. **Park Trees and Other Landscaped Areas.** A list of designated locations for park trees will be provided by the City Landscape Architect or Engineer when bid(s) has been awarded. Planting locations will be marked by the City with paint or wooden stakes. The Contractor is to inform the City Landscape Architect or Engineer on a **daily** basis by no later than 8:00 a.m. as to what locations have been planted during the prior day and where planting will resume. Access to the planting sites will be restricted to roads for all vehicles. Permission to travel with any equipment anywhere other than the established roads must be obtained from the City Landscape Architect or Engineer.

31.07 SITE PREPARATION

- A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.
- B. Layout individual tree and shrub locations. Stake locations and secure City Arborist, Landscape Architect or Engineer's acceptance before start of planting work. Make minor adjustments as may be requested. Installation of plant material may not begin until City Arborist, Landscape Architect, or Engineer has approved planting locations.
- C. **Under Ground Facilities. Contractor will be responsible for having all underground utilities properly located prior to digging/planting. Any utility relocates that are necessary will also be the responsibility of the contractor including any costs associated with them and not the City of Lincoln.** Planting sites less than five (5) feet from lateral underground utility lines (i.e. electric, gas, water, etc.) shall require contacting the City Arborist for street trees or City Landscape Architect or Engineer for park trees so that alternate planting location(s) can be marked.

31.08 PLANTING OF TREES AND SHRUBS

- A. Trees may be moved and planted with an approved mechanical tree spade. The tree spade shall have a manufacturer's size rating equal to or exceeding the tree sizes to be moved. The machine shall be approved by the City Arborist, Landscape Architect or Engineer prior to use. Trees shall be planted at the designated locations in the manner as shown in the plans and in accordance with sections of the Specifications that are applicable. Tree pits may either be dug manually or mechanically using an auger or tree spade.
- B. Excavate pits, beds and trenches with vertical sides and with bottom slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation and scarify sides.
- C. For balled and burlapped trees and shrubs, scarify bottom of the excavations to a depth of 4". Make excavations equal to the depth of ball, and diameter at least twice as wide as the root ball or root systems to allow enough space to permit loose backfill to be worked down and around the root ball or root system.
- D. **(Refer to detail on page 3107, showing root ball in reference to soil line and back-fill)**
- E. Glazing of the sides of the planting pits dug with shovels, mechanical augers, or tree spades shall be minimized by scarifying or roughening before backfilling to provide for easier lateral outward growth of the developing roots. All tree pits shall be backfilled manually.
- F. Planting pits shall be backfilled the same day they are dug. If any planting pits are to be left open when work is not in process or create a safety hazard to the public, they shall be covered over or properly barricaded.
- G. Plants shall be lifted and handled with suitable support of the soil ball to avoid damage. Container and balled and burlapped plant material shall be lifted, carried and/ or lowered by the root ball, never by the trunk.
- H. Plants shall be set so that the trunk flare is exactly at the existing grade in loamy or sandy soils and 1" to 2" above the existing grade in clay or poorly drained. Plants should not be planted deeper than they were in their former growing location. To eliminate settling, the bottom of the planting hole shall be undisturbed soil so that it will give solid support to the bottom of the root ball or root system.
- I. Plants must be plumb (straight) and centered in the planting hole before backfilling and after planting is complete.
- J. Fertilizer shall be an approved root biostimulant (i.e. Roots by City). Apply according to the directions on the label.
- K. If the plant is in a container or pot, the plant shall be carefully removed from the container or pot and the exterior of the root ball manually loosened to encourage roots to grow out into the surrounding soil prior to setting the plant in the planting hole.

31.08 PLANTING OF TREES AND SHRUBS (Cont.)

- L. If the plant is balled and burlapped all rope, strings, twine, wire, and wrapping from the top one-half (1/2) of the ball shall be removed after the plant has been set in the planting hole.
- The balance of the wrapping is to be left intact around the root ball. All waterproof or water repellant wrappings shall be removed entirely from the ball.
- M. If large or numerous rocks, construction debris, fill, tree roots or other obstructions are encountered in digging planting pits, suitable alternate locations shall be selected by the City Arborist, Landscape Architect or Engineer. Where such obstructions are encountered, the Contractor shall proceed with doing other planting work at different designated locations and not stop work. Under no circumstances shall pits that have such obstructions be left open and shall be backfilled by the Contractor before leaving the site.
- N. Planting pits are to be backfilled with the **same** soil that is excavated from them. Topsoil and subgrade soil shall be loosened and mixed to a depth twelve (12) inches before backfilling. Topsoil shall be gently firmed around the plant to hold it in place and to eliminate air pockets. When pits are approximately two-thirds (2/3) full, they are to be thoroughly watered to also eliminate air pockets. After this initial watering, topsoil is to be installed to the top of pit and watered. Puddled soil conditions resulting from over watering are to be avoided.
- O. After the planting pit has been completely backfilled, make a ridge of soil two (2) to four (4) inches in height is to be formed around the outside margin of the pit to create a reservoir for watering.
- P. Top of planting pits are to be mulched with a two (2) to four (4) inch layer of wood chips five (5) feet in diameter, immediately after planting. All shrub beds to be mulched as a continuous bed with a natural "6" trench separating the planting area from the turf area.
- Q. Plants are to be thoroughly watered immediately after planting. Over watering is to be avoided. Contractor must supply water and equipment needed (e.g., water truck, hose, buckets, etc.) to water trees. Under no circumstances shall water from homes be used by the Contractor to water trees. Watering from fire hydrants may be used only after securing a permit and meter from the City Water Department.
- R. When conditions detrimental to plant growth are encountered, such as rubble fill or adverse drainage conditions, notify City Arborist, Landscape Architect, or Engineer. Hand excavate near underground utilities. Maintain grade stakes set by other until removal is agreed upon by all parties considered.

31.09 PLANTING PERENNIALS AND ORNAMENTAL GRASSES

- A. Prepare soil at perennial areas by spading deeply to a depth of at least 8 inches below the finished grade. Add yard waste compost to planting area so that the final planting medium composition is 60% topsoil and 40% compost to the 8 inch depth. Rake planting bed smooth. **NOTE: Some ornamental grasses may not require compost, so verify with Arborist, Landscape Architect or Engineer.**
- B. Moisten soil before planting to allow it to dry slightly until workable. Set plants at specified spacing. Do not remove plant from container until it is to be set in planting soil.
- C. Mulch perennial plants. Provide not less than 2" thickness of mulch and work into top of backfill and finish level with adjacent grades. Mulch within 24 hours of planting. Thoroughly water mulched areas. All perennial and ornamental grass beds to be mulched as a continuous bed with a natural "6" trench separating the planting area from the turf area. Mulch shall cover all disturbed earth within the planting area.
- D. **Plants are to be thoroughly watered immediately after planting.** Over watering is to be avoided. Contractor must supply water and equipment needed (e.g., water truck, hose, buckets, etc.) to water trees. Under no circumstances shall water from homes be used by the Contractor to water trees. Watering from fire hydrants may be used only after securing a permit and meter from the City Water Department.
- E. When conditions detrimental to plant growth are encountered, such as rubble fill or adverse drainage conditions, notify City Arborist, Landscape Architect, or Engineer. Hand excavate near underground utilities. Maintain grade stakes set by other until removal is agreed upon by all parties considered.

31.10 PRUNING OF PLANT MATERIAL

Pruning shall only be done at the time of planting if necessary. All broken, weak and interfering (i.e., crossing or rubbing) branches shall be properly removed by the Contractor after the tree has been planted. Drop crotch pruning shall be done and pruning cuts properly made so that the branch collar and/or branch bark ridge are not cut. All other sound and healthy branches shall be left intact to provide maximum leaf surface to manufacture food for crown and root growth.

31.11 STAKING AND SUPPORT OF PLANT MATERIAL

Wrapping of trunks with tree wrap is not required. All existing tree wrap, if any, shall be removed from trunks immediately after planting.

Staking of all upright deciduous and coniferous trees is required.

Staking shall be required after planting Street Trees and Park Trees. Staking of Street Trees shall be completed immediately after planting unless staking is not specified.

31.11 STAKING AND SUPPORT OF PLANT MATERIAL (Continued)

Street Trees are to be secured after planting by a single support stake driven at approximately a 45⁰ (degree) angle to the ground plane avoiding the root ball. Stakes are to be driven to a minimum depth of 12 inches into undisturbed soil and contained within the 5' mulched tree ring. Trees should be secured to stakes using nylon webbing configured in a "Figure 8" allowing for flexibility of the tree trunk, while transferring support from the stake to the tree. **(Refer to detail on Page 3108)**

Deciduous **Park Trees & Trees in other Landscaped Areas** are to be secured after planting by two support stakes driven at approximately 90⁰ (degree) angle to the ground plane avoiding the root ball. Stakes are to be driven to a maximum depth of 12 inches into undisturbed soil, and contained within the 5' mulched tree ring. Trees should be secured to stakes using nylon webbing configured in a "Figure 8" allowing for flexibility of the tree trunk, while transferring support from the stake to the tree. **(Refer to detail on Page(s) 3109 and 3110)**

Tree guards shall be installed on all deciduous trees. The guards shall be plastic and will be provided by the City.

31.12 MARKING PARK TREES

A. Park trees shall be marked with materials provided by the City to aid in monitoring

plantings from year to year. Deciduous trees shall be marked with a circle of spray paint approximately two (2) inches in diameter at the base of the trunk. Coniferous trees shall be marked with a colored tag placed on a side branch, not on the central leader.

31.13 CARE INSTRUCTIONS FOR STREET TREES

Instructions on the care of street trees will be provided by the City for the Contractor to distribute immediately at each planting location. The contractor is to leave the instructions in the form of a "door hanger" at the door of the adjoining residence or commercial property. Door hangers are not to be placed in mail boxes.

31.14 ACCEPTANCE AND ESTABLISHMENT PERIOD

A. Upon completion of planting the City Arborist, Landscape Architect or Engineer will inspect the plant material for acceptability. The Contractor will be notified of the dates of this inspection. All items of work as required in the Specifications, the Special Provisions, and the plans shall have been performed prior to this inspection. Any item not been completed may make a plant unacceptable. Unacceptable plant material may be allowed to remain in place without payment. A subsequent inspection may be made thirty (30) days subsequent to the initial inspection to determine the acceptability of plant material and therefore, allowing payment for such plants.

31.14 ACCEPTANCE AND ESTABLISHMENT PERIOD (Continued)

- B. During the establishment period, the Contractor shall properly maintain all plant materials planted under the contract. The establishment procedures shall include additional pruning, protective measures against pests and diseases, watering as often as required by necessity, cultivating, repairing dunes to the watering basins, replacing mulch which becomes displaced, keeping the stakes firm and the guys adjusted, weeding with a pre-emergent weed control or other approved means, and other establishment procedures as deemed necessary by the City Landscape Architect or Engineer, including the removal of any dead plant material for the project. **Note: the Contractor is responsible for watering all plant material as necessary during the one year establishment period.**
- C. The establishment period will follow the completion of all planting and shall extend for a period of one year. The establishment period will not begin until all of the following items of work as required in the Specifications, the Special Provisions, and the plans have been performed on each and every plant material; including proper planting, backfilling, watering, pruning, staking, supporting, water basin construction and mulching. All plant material shall be in viable growing condition when the project enters the establishment period.
- D. Upon completion of the establishment period, the City Arborist, Landscape Architect or Engineer will make an inspection of the plant material to identify plant material to be replaced under warranty. The inspection will normally be made during the month that the establishment period terminates. The Contractor will be notified of the dates of this inspection. A list of plant material quantities and locations will be provided to the contractor for replacement. Replacement of plant materials shall occur within thirty (30) days of receipt of this list. Plant replacement shall be at the Contractor's expense. Establishment procedures that have not been performed shall be brought to the Contractor's attention and may cause the establishment period to be extended. **All replacement plant material shall receive the establishment procedures referred to in Section 31.07.** The Contractor will be notified in writing when his/her establishment responsibilities on the acceptable plant material have been terminated.

31.15 REPLACEMENT OF PLANT MATERIAL AND GUARANTEE PERIOD

The guarantee period for trees shall begin at the date of acceptance.

The Contractor shall guarantee all plant material to be in healthy and flourishing condition for a period of one (1) year from date of acceptance.

The Contractor shall replace, without cost, and as soon as weather conditions permit and within a specific planting period, all plants determined by the City Arborist, Landscape Architect, or Engineer to be dead during or at the end of the guarantee period.

31.15 REPLACEMENT OF PLANT MATERIAL AND GUARANTEE PERIOD
(Continued)

- A. During the guarantee period, the City shall properly maintain all plant materials planted under the contract. The establishment procedures shall include additional pruning, protective measures against pests and diseases, watering as often as required by necessity, cultivating, repairing damage to the watering basin, replacing mulch which becomes displaced, keeping the stakes firm and support ties adjusted, weeding with a pre-emergence weed control or other approved means and other establishment procedures as deemed necessary by the City Arborist, Landscape Architect or Engineer including the removal of any dead plant material from the project.

Replacement plants shall be free of dead or dying branches and branch tips shall bear foliage of normal density, size and color if in leaf. Replacements shall closely match adjacent specimens of the same species that have been planted. Replacements shall be subject to all requirements, standards, special provisions and specifications stated herein.

The guarantee of all **replacement** plants shall extend for an additional period of one (1) year from date of their acceptance and installation. In the event that replacement plants are not acceptable during or at the end of the said extended guarantee period, the City Arborist, Landscape Architect or Engineer may elect subsequent replacement or credit (refund) for them.

31.16 VANDALISM

Trees damaged as a result of vandalism are not required to be replaced as apart of this contract.

31.17 QUALIFICATIONS FOR SUBMITTING BIDS

- A. Contractor(s) must be licensed according to the Nebraska Administrative Code for Plant Protection and Plant Pest Act.
- B. Contractor(s) must be a Nebraska Certified Nurseryman and a current member of the Nebraska Nursery and Landscape Association.
- C. Contractor must be able to demonstrate a minium work experience record.
- D. Contractor must be able to demonstrate successfully completed projects similar to scope and scale.

31.18 REQUIREMENTS FOR SUBMITTING BIDS

All bids submitted must include the following information on the **BID PROPOSAL**:

Interested parties may complete and submit bid PROPOSAL for any or all of the four quads.

The unit price (i.e., cost per plant) for each species listed on bid PROPOSAL is to include furnishing, delivery and planting at various locations throughout the City of Lincoln. Plant material as specified on the bid PROPOSAL which cannot be furnished, delivered and planted should be noted in writing as “not available” on the bid PROPOSAL form.

The number of plants which can be furnished is to be entered on the bid form. This number may include all, or only a portion of the total quantity needed per plant species. Total price is the unit price multiplied by the quantity that bidder can provide in relation to the quantity needed per plant species.

All bid prices shall be firm and shall include all necessary labor, materials and equipment required as specified within these specifications.

Bids submitted shall conform to the contract forms and the specific requirements of these specifications.

Specified plant materials shall conform to the measurements specified on the bid PROPOSAL list, except that plants larger than specified may be accepted if approved by the City Arborist, Landscape Architect or Engineer. Acceptance of such plant materials shall not increase the unit price indicated on the bid PROPOSAL nor be an additional cost to the City.